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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/784,118

02/20/2004

David P. Prince

M2010-7128

5274

37462

7590

11/19/2004

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RIVERFRONT OFFICE

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EXAMINER

BALI, VIKKRAM

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/784,118

**Applicant(s)**

PRINCE, DAVID P.

**Examiner**

Vikkram Bali

**Art Unit**

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 20 is/are allowed.
- 6) ☒ Claim(s) 14-19 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/20/2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-8, 14-25, drawn to mask inspection, classified in class 382, subclass 144.
  - II. Claims 9-13, drawn to semiconductor manufacturing using the optical characters scanning, classified in class 438, subclass 16.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as manufacturing a semiconductor device using an optical character scanning. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Keith Noe, #34,686 on 11/8/2004 a provisional election was made without traverse to prosecute the invention of Group I,

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claims 1-8 and 14-25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-13 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 14-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17, 18 and 24 of copending Application No. 10/734,395. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 14 of the instant application claims all the features of the claim 17 of copending application except the depositing of the substance through a stencil on to a substrate as claimed in the instant application. But, inspecting a substrate having a substrate deposited, as claimed in the

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copending application is similar to the substance deposited through a stencil on to a substrate.

Claim 15 and 16 of instant application is similar to the claims 24 and 18 of the copending application.

Claims 17-19 of the instant application is claiming subject matter that is known in the lithography and ADC (automatic defect classification).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 is a system claim depending upon a method claim.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle et al (US 5873939) in view of Takagi et al (US 5801965).

With respect to claim 21, Doyle discloses dispensing material through stencil on to the substrate, (see col. 5, lines 17-19 and 23-26) as claimed. However, he fails to claim performing texture based recognition to find a feature, comparing the feature to find the defect and do the stencil wipe procedure. Takagi teaches texture-based recognition for the features in order to detect and classify the defects, (see col. 11, lines 30-38). It would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as they are solving the similar problem of circuit board manufacturing (see col. 1, lines 4-6 Doyle and col. 1, lines 8-11 Takagi). The process of inspecting the wafer as taught by Takagi can be combine to the Doyle's system to get a over all system that can properly and quickly adjust inspecting standards on the basis of the automatic inspection.

Doyle and Takagi fail to disclose the stencil wipe procedure, as claimed. But, it is well known in the field of lithography to do the this procedure once the material is dispensed on to the substrate. Therefore, it would have been obvious to one ordinary skilled in the at the time of invention to simply use the well known feature of stencil wipe procedure to clean the substrate once the material is dispensed.

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With respect to claim 22, Takagi further teaches the feature being one of a defect (see figure 5 for the defects occur during the process) as claimed.

With respect to claim 23, Doyle further discloses printed circuit board, (see col. 1, lines 5-8, the circuit boards) as claimed.

With respect to claim 24, Doyle further discloses substrate includes solder paste, (see col. 5, lines 23-26, solder paste) as claimed.

With respect to claim 25 as best understood, Takagi further teaches the performing texture based recognition of a solder deposit on the substrate (see col. 11, lines 30-38) as claimed.

***Allowable Subject Matter***

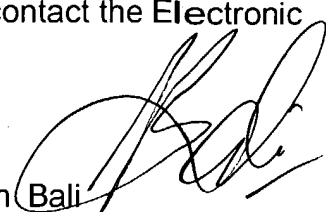
11. Claims 1-8 and 20 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vikram Bali  
Primary Examiner  
Art Unit 2623

vb  
November 16, 2004